COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts	D.T.E. 01-20

VERIZON MASSACHUSETTS

SECOND SET OF INFORMATION REQUESTS TO AT&T

Verizon New England Telephone Inc. d/b/a Verizon Massachusetts ("Verizon MA") requests that AT&T Communications of New England, Inc. ("AT&T") respond to the following information requests addressed to it or its witnesses. In the event responses to all or part of these requests will not be forthcoming in the time period established for this proceeding by the Massachusetts Department of Telecommunications and Energy, kindly notify Verizon MA as soon as possible.

These requests shall be deemed continuing so as to require further and supplemental responses if AT&T, or its witnesses receive or generate additional information within the scope of these requests between the time of the original responses and the end of hearings in this proceeding.

All responses should conform to the specifications as given in the Definitions and Instructions, with respect to dates, documents, claims or privileges, etc.

If AT&T feels that any request is ambiguous, please notify Verizon MA so that the request may be clarified prior to the preparation of a written response.

DEFINITION AND INSTRUCTIONS

1. With respect to each question, please state: (1) the name(s) and title(s) of the person or persons responsible for preparing the response; (2) the name(s) and title(s) of the person or persons who would be competent to testify concerning the response, whether or not that person will be called as part of the party's direct case in this proceeding.

2. In these Information Requests, "AT&T" means AT&T Communications of New England, Inc., HAI Consulting, Inc. ("HAI"), BroadView Telecommunications, LLC ("BVT"), Telecom Visions, Inc. ("TVI") and their respective parents, subsidiaries, affiliates, agents, servants, attorneys, investigators, employees, ex-employees, consultants, representatives and others who are in possession of, or who may have obtained information for or on behalf of any of the above mentioned persons or entities.

3. "Verizon" means Verizon New England, Inc. d/b/a Verizon Massachusetts.

4. "HAI 5.2a" means the HAI Model, Release 5.2a-MA filed by AT&T in this proceeding.

5. "Inputs Portfolio" means the HAI Model, Release 5.2a-MA Inputs Portfolio filed by AT&T in this proceeding.

6. "Model Description" means the HAI Model, Release 5.2a-MA Model Description filed by AT&T in this proceeding.

7. "Document" and "documentation" are used in the broadest sense to mean all writings and records of every type, including without limitation, written, printed, typed or visually reproduced material of any kind, the original and all copies of any and all letters, reports, memoranda, files, communications, correspondence, agreements, bills, receipts, studies, analyses, telegrams, telexes, minutes, bulletins, instructions, literature, memoranda of conversations, notes, notebooks, diaries, data sheets, financial statements, work sheets, recordings, tapes, drawings, graphs, indexes, charts, telephone records, photographs, photographic records, computer files, whether or not such files are presently in a hard copy form, other data compilation, or any other written recorded, transcribed, punched, taped, filed or other graphic matter including any draft of the foregoing items and any copy or reproduction of any of the foregoing items upon which any notation, work figure, or form is recorded or has been made which does not appear on the original or as to whose existence, either past or present, the responding party has any knowledge of information. "Document" and "documentation" shall also mean copies of documents, notwithstanding that the originals thereof are not in your possession, custody or control, and all attachments to any document.

8. If AT&T cannot answer a request in full, answer to the extent possible and state why AT&T cannot answer the request in full.

9. If AT&T refuses to respond to any request by reason of a claim of privilege, state the privilege claimed and the facts relied upon to support the claim of privilege.

10. Please serve a copy of the responses to these requests on Verizon MA's attorney, Bruce P. Beausejour, 185 Franklin Street, Room 1403, Boston, Massachusetts 02110-1585. Please make every effort to expedite delivery of responses to these requests, including email, shipping by Express Mail, UPS, Federal Express, Purolator Courier, or means of equal or greater speed.

INFORMATION REQUESTS

1. Identify the following values used by AT&T in planning its network:

a. the route to air ratio for inter-office facilities;

b. the actual number of minutes per month, per DS0 level switched access trunk;

c. the investment per DSO level trunk port;

d. the investment per installed OC-48 ADM multiplexer (equipped with 48 DS3s and equipped with 12 DS3s;

e. the investment per installed foot of fiber;

f. the tandem common equipment investment;

g. the switch installation multiplier;

h. the power investment per switch;

i. the cost of construction per square foot of a wire center building;

j. the price per square foot of land that contains switch buildings;

k. the busy hour fraction of daily usage;

l. the annual to daily usage reduction factor;

m. the installed terminal multiplexer investment per OC3;

n. the interoffice facility wire center EF&I fully loaded labor rate per hour in Massachusetts;

o. the installed cost of an OC-48 regenerator;

p. interoffice facility fiber optic regeneration spacing;

q. optical distribution panel cost to connect 24 fibers to the transmission equipment; and,

r. the number of hours required to install the equipment associated with the interoffice transmission systems.

2. Provide all documents concerning, referring or relating to the derivation of the $35.00 per hour loaded labor cost associated with NID and drop installation as referenced on page 156 of the Inputs Portfolio.

3. Identify the expert outside plant engineers and estimators used to project the amount of time necessary to attach a drop wire clamp at a utility pole, string the drop, and attach a drop wire clamp at a house or building as described on page 16 of the Inputs Portfolio. Provide all documents concerning or supporting these time estimates and how they were used or derived.

4. Provide the underlying data used in the calculation of the occupancy rates shown on page 48 of the Inputs Portfolio.

5. Explain in detail how switching costs are calculated in HAI 5.2a. Include in your answer the source and derivation of each of the cost points used to determine the switching curve(s) used to calculate switching costs. Provide copies of all invoices, catalogues, published estimates or other documents referred to in determining the switching cost curve(s). To the extent HAI 5.2a relies on any prices or data adopted by the FCC in the USF Inputs Order,[(1)] provide all analysis generated to determine whether these inputs are appropriate for Massachusetts.

6. Provide the rationale for and all documents, studies and workpapers used in the determination of the distribution and feeder sharing fractions for aerial, buried and underground plant in Massachusetts.

7. Explain in detail how feature costs are developed by HAI 5.2a. In your answer, specify each feature included in the cost estimate and the cost associated with that feature. Provide copies of all documents, studies, or workpapers generated in determining these feature costs.

8. Provide all documents concerning, referring or relating to the determination of the forward looking network operations factor of 50%, referenced on page 132 of the Inputs Portfolio.

9. Page 158 of the Inputs Portfolio states the Regional Labor Adjustment Factor was normalized for Massachusetts at 1.09. Was the factor normalized in the 1997 National Construction Estimator 45th Edition?

10. In each and every instance where John Donovan's testimony provides specific costs obtained from suppliers or contractors:

a. identify the source of each such estimate presented and a description of the equipment or service reflected in the cost;

b. for each cost obtained from a third-party, state whether the cost includes shipping and taxes, and if so indicate the amount allowed for each;

c. state whether the cost includes any volume discounts, and if so provide the volumes required to obtain the discounts;

d. state the date on which the estimate was obtained and the name of the person who obtained it; and,

e. provide copies of all invoices, contracts, catalogues, published estimates or other documents referencing the supplier and contractor costs presented by Mr. Donovan, along with a copy of all workpapers and backups generated in collecting this cost information.

11. Identify each and every cost estimate AT&T provided to the developers of the default inputs used in HAI 5.2a or any earlier version of the model, and provide all documents, workpapers and backups generated in assembling and providing this information.

12. Identify the basis for the material, direct labor and engineering costs presented by Mr. Donovan in his analysis of the installed copper cable costs. Provide copies of all invoices, contracts, catalogues, published estimates or other documents referred to or relied upon in determining these inputs, along with a statement of all factors that support the cost figures used by Mr. Donovan. Provide a copy of all workpapers and backups generated in this analysis.

13. Provide copies of all invoices, contracts, catalogues, published estimates or other documents referred to or relied upon in determining the central office DLC equipment material and labor costs identified in the testimony of John Donovan, along with a statement of all factors that support these costs in all computations performed to generate them. Provide a copy of all workpapers and backups generated in determining these costs.

14. Robert A. Mercer states at page 46, footnote 4 of his direct testimony that additional remote terminals and SAIs are supplied whenever the actual line count in a serving area exceeds 1,800 lines. Describe in detail the process used to add this additional equipment and to calculate the associated investment.

15. Provide AT&T's investment cost per foot for fiber feeder cable installed in Massachusetts.

16. Describe in detail how HAI 5.2a calculates the investment required to engineer the interoffice rings modeled.

17. Describe in detail how the interface rings modeled in HAI 5.2a are designed, how many nodes are included, how many add - drop multiplexers are included and in what locations. In your answer, explain how is the ring capacity determined, and identify the total expected number of DS3's on a ring. If the total expected number of DS3's or a ring is not set in the model, explain in detail how HAI 5.2a:

a. determines whether ring capacity is exceeded on any link;

b. includes wideband or broadband electronic cross-connection devices and if so, identify how HAI 5.2a determines their capacity;

c. ring to ring interconnection is created in HAI 5.2a;

d. interconnection to local IOF and loop facilities is created in HAI 5.2a;

e. identify where HAI 5.2a algorithms that perform these calculations are located; and,

f. provide all documents, studies, or workpapers generated in developing the algorithms that calculate interoffice investment.

18. Explain in detail the basis for the fiber feeder investment per foot inputs used in HAI 5.2a, including specifically a description of the analysis of RUS data identified at page 64 of the Inputs Portfolio. Provide a complete copy of the "analysis of data involving fiber cable" that was performed, along with copies of all workpapers, backups, and drafts prepared in connection with that analysis. Identify who conducted this analysis, when it was conducted, and the methodology used to complete the analysis.

19. Explain where and how HAI 5.2a calculates the investment required for test equipment (and the associated capital costs and expenses), and describe in detail the inputs and algorithms used to determine these investments and expenses.

20. Explain where and how HAI 5.2a calculates the investment required for housing central office equipment (and the associated capital costs and expenses) and describe in detail the inputs and algorithms used to determine this investment and expense.

21. Explain where and how HAI 5.2a calculates the investment required for land and buildings used as general support (i.e., the portion not used to house central office equipment) and associated capital costs and expenses and describe in detail the inputs and algorithms used to determine these investments and expenses.

22. Explain where and how HAI 5.2a calculates the investment required for computers (and associated capital costs and expenses), and describe in detail the inputs and algorithms used to determine these investments and expenses.

23. Explain where and how HAI 5.2a calculates the investment required for vehicles and work equipment (and associated capital costs and expenses), and describe in detail the inputs and algorithms used to determine these investments and expenses.

24. Referring to Appendix C of the Inputs Portfolio, provide all workpapers and other documents supporting the development of the Expense-to-Investment Ratios for the following Network Expense accounts:

a. 6212 Digital Electronic Expense

b. 6230 Operator Systems Expense

c. 6232 Circuit Equipment Expense

d. 6351 Public

e. 6362 Other Terminal Equipment

f. 6411 Poles

g. 6421 Aerial Cable

h. 6422 Underground Cable

i. 6423 Buried Cable

j. 6426 Intrabuilding Cable

k. 6431 Aerial Wire

l. 6441 Conduit Systems.

For each item a through l above, explain in detail the basis for why the data used is appropriate for the Massachusetts cost studies at issue in this case.

25. Please explain where and how the investment required for office equipment (and associated capital costs and expenses) is calculated in HAI 5.2a and describe in detail the inputs and algorithms used to determine these investments and expenses.

26. As referenced in Appendix C of the Inputs Portfolio, HAI 5.2a multiplies the embedded amount of Carrier-to-Carrier Customer Service expenses by 70% to get an amount of $1.69 per line per year. Please provide

a. the basis for, and all workpapers and documents concerning, referring or relating to the 70% value;

b. all workpapers and documents supporting the derived amount of $1.69 per line per year. Include a complete documentation of both the numerator and the denominator of the amount determined prior to the application of the 70% figure discussed in part a) above;

c. the complete rationale for assuming that the carrier customer-related billing expenses incurred by Verizon to serve IXC access services is appropriate to use as the billing expenses Verizon will incur to serve purchasers of UNEs;

d. the complete rationale for assuming that the carrier customer-related billing inquiry expenses incurred by Verizon to serve IXC access services is appropriate to use as the billing inquiry expenses Verizon will incur to serve purchasers of UNEs; and,

e. the complete rationale for assuming that the carrier customer-related payment and collections expenses incurred by Verizon to serve IXC access services is appropriate to use as the payment and collections expenses Verizon will incur to serve purchasers of UNEs.

27. Identify the "sources" that provided price quotes for NIDs, along with copies of such quotes, and all worksheets and calculations used to develop or to verify the material and installation costs as referenced in the Inputs Portfolio on pages 11 through 14.

28. Provide a copy of "Bellcore's BOC Notes on the Networks - 1997" referenced in the Inputs Portfolio.

29. Provide complete copies of the "suburban and rural buried drop placement" quotes, and all worksheets and calculations used to develop or to verify the material and installation costs, as referenced on page 16 of the Inputs Portfolio.

30. Provide the names, and complete copies, of the "verifiable forward looking alternatives from public sources or ILECS" referenced on page 16 of the Inputs Portfolio.

31. Provide the list of "architects and builders" that ATT had "conversations with" regarding trenching referenced on page 18 of the Inputs Portfolio

32. Provide complete copies of the "1995 Common Carrier Statistics" and "1995 Statistical Abstract of the United States" referenced on page 18 of the Inputs Portfolio. Also include all workpapers and calculations used to develop or to verify the average lines per business location.

33. Identify the "sources" that provided price quotes for drop wire cost per foot, and provide copies of such quotes, and all worksheets and calculations used to develop or to verify the material costs referenced on page 20 of the Inputs Portfolio.

34. Provide a copy of the "actual quote for materials," along with all worksheets and calculations used to develop or to verify the costs referenced on page 22 of the Inputs Portfolio.

35. Referring to page 22 of the Inputs Portfolio, provide:

a. copies of the installed cable costs that were "reviewed" to estimate the installed cost of copper cable for sizes of 400 pairs and larger; and,

b. all worksheets, calculations, analyses or other written documents that were reviewed or prepared to develop or to verify the copper cable costs.

36. Identify the "several sources" that provided the pole prices as referenced on page 24 of the Inputs Portfolio. Also, provide all worksheets and calculations used to develop or verify these costs.

37. Provide all data used to support the assumption that installed buried filled cable is 1.04 times as expensive as non-filled buried cable as referenced on page 26 of the Inputs Portfolio.

38. Identify the "several suppliers" that provided material prices for 4" PVC, along with copies the price quotes, and all worksheets and calculations used to develop or verify the material costs as referenced on pages 26-27 of the Inputs Portfolio.

39. Referring to the claim made on page 30 of the Inputs Portfolio that "many buried structures are available to the LEC at no charge," identify each person that was contacted that confirmed or verified this claim and provide copies of all documents reflecting these contacts.

40. Referring to page 30 of the Inputs Portfolio, provide the number of lines in HAI 5.2a that are assumed to be in a "campus environment."

41. Referring to page 35 of the Inputs Portfolio, explain in detail whether and how the use of a distribution multiplier of 1.0 accounts for difficult soil conditions.

42. Referring to page 37 of the Inputs Portfolio, identify the independent contractors, the state in which they conduct business, and the information received from them, along with all documents, price quotes, worksheets and calculations used to develop the rock saw/trenching ratio used to determine the hard rock placement multiplier of 3.5.

43. Referring to page 37 of the Inputs Portfolio, identify the independent contractors, the state in which they conduct business, and the information received from them, along with copies all documents, price quotes, worksheets and calculations used to develop the rock saw/trenching ratio and used to determine the soft rock placement multiplier of 2.0.

44. Describe in detail all efforts undertaken by AT&T to validate the use of a Main Feeder Route/Air Multiplier of 1.27 and to ensure that this multiplier estimates sufficient cable lengths to accommodate obstructions and route diversions that exist in the real world as referenced on page 39 of the Inputs Portfolio. Provide all documents concerning, referring or relating to the development of this input.

45. Provide all documents, workpapers, calculations, and analyses performed by PNR Associates, Inc. in determining the aspect ratio for each cluster as referenced on page 40 of the Inputs Portfolio.

46. Provide the following with respect to the "experienced outside plant experts" that developed the installed cost of a T1 repeater as referenced on page 41 of the Inputs Portfolio:

a. the identity of the "experts";

b. copies of all instructions, survey forms, workpapers, and documents used by the "experts" to develop the cost;

c. copies of all vendor (supplier) information provided to the "experts" to develop the cost;

d. a list of the vendors contacted;

e. a breakdown of the cost into equipment cost and installation cost;

f. the list price of the equipment before the discount was subtracted; and,

g. the discount.

47. Referring to page 41 of the Inputs Portfolio, explain in detail how the T1 cost developed by the "experts" was validated by AT&T, and provide copies of all workpapers, documents, and calculations reviewed or used to develop or verify the accuracy of the T1 cost presented.

48. Provide the following with respect to the "experienced outside plant experts" that developed each of the installed costs of a T1 for an Integrated COT; and RT Cabinet and Commons, and a Channel Unit Investment per Subscriber as referenced on page 42 of the Inputs Portfolio:

a. the identity of the "experts";

b. copies of all instructions, survey forms, workpapers, and documents used by the "experts" to develop the cost;

c. copies of all vendor information provided to the "experts" to develop the cost;

d. a list of the vendors contacted;

e. a breakdown of the cost into equipment cost and installation cost;

f. the list price of the equipment before the discount was subtracted;

g. the discount.

49. Referring to page 42 of the Inputs Portfolio, explain in detail how the installed cost of a T1 for an Integrated COT and RT Cabinet and Commons, and a Channel Unit Investment per Subscriber were validated by AT&T and provide all workpapers and other documents that were prepared or reviewed to develop or to validate these costs.

50. Provide the following with respect to the "experienced outside plant experts" that developed each of the installed costs of a T1 Transceiver as referenced on page 43 of the Inputs Portfolio:

a. the identity of the "experts";

b. copies of all instructions, survey forms, workpapers, and documents used by the "experts" to develop the cost;

c. copies of all vendor information provided to the "experts" to develop the cost;

d. a list of the vendors contacted;

e. a breakdown of the cost into equipment cost and installation cost;

f. the list price of the equipment before the discount was subtracted;

g. the discount.

51. Explain how the installed cost of the T1 Transceiver was validated by AT&T. Please provide all workpapers and documents that were prepared or reviewed to determine or validate this cost.

52. Provide a complete copy of the "AT&T Outside Plant Engineering Handbook, August 1994" referenced on page 59, footnote 28 of the Inputs Portfolio.

53. Provide all workpapers, including any electronic files, showing the calculations that were used to develop the Pole Investments shown on page 54 of the Inputs Portfolio by using the data from the FCC web site referenced in footnote 24. Provide all the data used and explain in detail the methodology used to develop the costs shown.

54. Referring to page 56, footnote 25 of the Inputs Portfolio, provide a list of the locations and jobs that the "experts" placed 8 fiber cables in a single 4" PVC duct without innerduct. In addition, please provide the identity of the "experts" referenced.

55. Does HAI 5.2a include costs for outerduct associated with buried cable? If your answer is yes, please provide a list of the costs included.

56. Does HAI 5.2a include costs for outerduct associated with any other type of cable? If your answer is yes, please provide a list of all costs included.

57. Referring to the Inputs Portfolio, page 83, section 4.1.6., show in detail how the MDF Investment is included in the calculations for fixed and per-line switch investment. Provide all workpapers and documents concerning, referring or relating to this calculation.

58. Explain where HAI 5.2a accounts for Product Management expenses (USOA 6611) and provide all workpapers detailing the development of the factor or value used in the model runs sponsored by AT&T witness Dr. Robert Mercer.

59. Explain where HAI 5.2a accounts for Sales expenses (USOA 6612) and provide all workpapers detailing the development of the factor or value used in the model runs sponsored by Dr. Mercer.

60. Explain where HAI 5.2a accounts for Advertising expenses (USOA 6613) and provide all workpapers detailing the development of the factor or value used in the model runs sponsored by Dr. Mercer.

61. Explain where HAI 5.2a accounts for Public Service Commission Assessments expenses (USOA 7240.1) and provide all workpapers detailing the development of the factor or value used in the model runs sponsored by Dr. Mercer.

62. In HAI 5.2a, what percentage of end office switches have tandem functionality and perform tandem functions? Provide the basis upon which this percentage was determined and all documents, data sources, workpapers, and calculations concerning, referring or relating to the development of the percentage.

63. Explain in detail how HAI 5.2a calculates the investment required for switches that are designated as end office/tandem switches. Please identify where in the workpapers or outputs from HAI 5.2a this calculation is reflected.

64. Provide a complete copy in paper and electronic format of the "Special LERG Extract Data (SLED)" used as the basis for input for HAI 5.2a.

65. Provide a list of switching entities, by Common Language Location Identifier (CLLI) codes, that were used in HAI 5.2a. In addition, list all entities that were part of the SLED, but not included in HAI 5.2, and state the reason why each one was excluded.

66. In HAI 5.2a, what percentage of distribution cable is considered riser cable?

67. Provide the line counts per CLLI used in HAI 5.2a and the number of lines designated as residential, business, non-switched, and private line by CLLI.

68. The Model Description indicates that there are two methods for costing out end office switching systems. In one method, the model utilizes explicit combinations of host, remotes, and standalones; in the other, the model assumes a blended portfolio of switch technologies. Please indicate which method is used to develop the end office switching costs in HAI 5.2a. Indicate precisely where in the model this method is "set" and what the user-adjustable inputs are for the "A" and "B" values. Provide all back-up data, vendor quotes, workpapers, and documents used to develop the "A" and "B" values.

69. Provide the vendor name and model of the 720 port capacity STP used as the basis of the STP investments in HAI 5.2a. Also provide complete copies all vendor quotes, calculations, contracts, and correspondence that was used as the basis for determining the STP investment used in HAI 5.2a.

70. Does HAI 5.2a assume operator tandem functionality is performed by tandems dedicated solely for the purpose of providing operator services? If your answer is yes, provide the number of tandems used by the model, and the associated investments. If your answer is no, provide a detailed explanation of how the operator services' tandem functionality is handled in the model, and provide the number of switches, types of switches, and their associated investments that provide this functionality.

71. Provide a hard (paper) copy of the data contained in the workfile "ring_io" of HAI 5.2a described in the Model Description for all rings used to develop the costs within HAI 5.2a.

72. Provide the following data for all rings used to develop costs within HAI 5.2a:

a. the set of wire centers that comprise each ring, including the "central" wire center (host, gateway, or tandem, depending on the ring);

b. the identification of each wire center and the nodes (other wire centers) to which it connects;

c. the distance between each wire center and the nodes to which it connects;

d. a list of the wire centers served by spurs and their associated spur distances;

e. a list of the wire centers that serve as inter-ring-system connector nodes and their associated inter-ring-system connector distance;

f. a list of the wire center pairs that serve as ring connectors and their associated ring connector distances;

g. the total number of ring connectors;

h. the total ring connector distance; and,

i. the total number of rings that include the tandem as a node.

73. Provide a complete list of each type of equipment, along with its corresponding price, comprising the ring terminal equipment located in the wire center by HAI5.2a. Also provide the source for the equipment configuration and all supporting documents, vendor information, quotes, workpapers, and calculations.

74. Referring to the Inputs Portfolio, 4.1.7, page 83, provide all back-up data, vendor quotes, correspondence, and calculations used to develop the $30.00 per line "Analog Line Circuit Offset for DLC Lines."

75. Provide the line sizes for each of the SAIs in HAI 5.2a and identify the number of SAIs that require 7,200 pair capacity.

76. Referring to the Inputs Portfolio, Section 4.1.7, page 83, explain how the DLC remote terminal can provide POTS service without line cards. Provide all vendor materials, correspondence, analyses, workpapers and documents that support this claim.

77. Referring to the "Switch Installation Multiplier" shown in the Inputs Portfolio, pages 83-84, Section 4.1.8, explain in detail how the MDF Investment is included in the calculations for fixed and per-line switch investment. Please provide all workpapers and documents concerning, referring or relating to this calculation.

78. Referring to the Inputs Portfolio, page 85, Section 4.1.11, provide all data sources, vendor information, and documents that the "subject matter experts" used to develop the Processor Feature Loading Multiplier. Also identify the number of "experts" consulted, and all notes, correspondence, and provide survey forms used in the consultations.

79. Referring to the Inputs Portfolio, page 85, Section 4.1.11, provide all documents and workpapers concerning, referring or relating to AT&T or MCI's validation of the Processor Feature Loading Multiplier.

80. Referring to the Inputs Portfolio, page 85, Section 4.1.12, provide all data sources, vendor information, and documents that the "subject matter experts" used to develop the Business Penetration Ratio and identify the "experts" consulted, and all notes, correspondence, and survey forms used in the consultations.

81. Referring to the Inputs Portfolio, page 85, Section 4.1.12, explain whether AT&T has validated or attempted to validate the Business Penetration Ratio Multiplier and provide all documents and workpapers concerning, referring or relating there.

82. Provide all documents supporting the per Square Foot Construction Costs shown on page 87, Section 4.2.5 of the Inputs Portfolio.

83. Referring to the Inputs Portfolio, page 87, Section 4.2.5, explain whether AT&T has validated or attempted to validate the Construction Costs shown and provide all documents and workpapers concerning, referring or relating there.

84. Provide all documents concerning or supporting the Land Price per Square Foot shown on pages 87-88, Section 4.2.6 of the Inputs Portfolio.

85. Referring to the Inputs Portfolio, pages 87-88, Section 4.2.6, explain whether AT&T has validated or attempted to validate the Land Prices in any way and provide all documents and workpapers concerning, referring or relating there.

86. Network switches and/or end user customers often require high capacity inter-office ("IOF") transport channels (DS1, DS3, OC3...) that extend across more than one IOF ring. For example, this occurs whenever the central offices at the end points of the required facility are not on a single ring.

a. describe the equipment configurations assumed in HAI 5.2a to create these necessary inter-ring connections and provide specific details for the ring interconnection configuration HAI 5.2a provides for each of the following common high capacity channels: DS1, DS3, OC3;

b. identify all costs estimated within HAI 5.2a (investment and expense) to provide each configuration;

c. explain in detail how HAI 5.2a estimates the total number of ring interconnections of each type are required in a study area;

d. how can a user determine the number of ring interconnections estimated by the model for a specific study area; and,

e. where in the output reports generated by HAI 5.2a can this information be located.

87. The Verizon MA IOF network must provide unbundled high capacity IOF channels at all standard optical channel rates: OC3, OC12, OC48.

a. does HAI 5.2a estimate a cost for these mandated unbundled elements? Can an estimate for these elements be derived from the model outputs?

b. how does HAI 5.2A estimate demand for these elements?

c. describe the specific algorithms, inputs and/or outputs involved in estimating the cost of these elements?

88. When HAI 5.2a determines that two end office switches are necessary in a single a wire center, does HAI 5.2a include two switch fixed investment amounts for that wire center, in addition to the $87 per line investment, in determining the switching cost? If so,

please identify where in HAI 5.2a spreadsheets this calculation takes place, and where in HAI 5.2a outputs it can be verified that these costs are included in the total estimated switch investment.

89. Provide a list of each wire center, by CLLI code, where HAI 5.2a estimates that more than one end office switch is required.

90. The Inputs Portfolio, page 81, describes the calculation of end office switch fixed and per line investment. In calculating this investment:

a. identify what percentage of lines are assumed on GR-303 peripherals;

b. identify what percentage of lines are assumed on TR-008 peripherals;

c. identify what percentage of lines are assumed on analog line units;

d. identify what percentage of trunks are assumed to be digital trunks; and,

e. identify what percentage of trunks are assumed to be analog trunks.

91. Has AT&T employed the use of splitter shelves and splitter cards in the provisioning of DSL service? If the answer is yes, please provide all documents:

a. identifying each vendor's material price to AT&T for both the shelf and the individual splitter cards;

b. identifying charges for any engineering, provisioning, installation, acceptance-testing type of activities performed by each vendor;

c. explain any non-material activities performed by vendors and/or AT&T;

d. identify the number of units of both the shelf and splitter cards purchased in 1999; and,

e. identify the expected number of units to be purchased in the current year.

92. Referring to the Inputs Portfolio, page 86, Section 4.2.3, show in detail how the Power Investment is included in the calculations for fixed and per-line switch investment and provide all workpapers and documents concerning, referring or relating to this calculation.

93. State the total number of SONET rings calculated by HAI 5.2a for Massachusetts.

94. Provide all back-up documentation that supports the switching investment allocation of 70% to usage and 30% to ports in HAI 5.2a.

Respectfully submitted,

Verizon Massachusetts

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[1] In the Matter of the Federal-State Joint Board on Universal Service, In the Matter of Forward-Looking Cost Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45 and 97-160, *Tenth Report and Order*, FCC 99-304 (rel. Nov. 2 1999). In the Matter of the Federal-State Joint Board on Universal Service, In the Matter of Forward-Looking Cost Mechanism for High Cost Support for Non-Rural LECs, CC Docket Nos. 96-45 and 97-160, *Tenth Report and Order*, FCC 99-304 (rel. Nov. 2 1999)